DOCUMENT RESUME

ED 116 743 JC 760 062

AUTHOR Caffey, Musa B.
TITLE The Cloze Procedure: A Measure for Determining Readability Level for Vocational Junior College Students.
PUB DATE Nov 75
NOTE 15p.; Paper presented at the meeting of the Mid-South Educational Research Association (Jackson, Mississippi, November 1975)

EDRS PRICE MF-$0.76 HC-$1.58 Plus Postage
DESCRIPTORS Cloze Procedure; *Junior Colleges; Junior College Students; *Readability; Reading Ability; *Reading Comprehension; Reading Level; *Textbooks; *Vocational Education
IDENTIFIERS Delgado Community College; SQ3R Study Formula

ABSTRACT

One hundred students enrolled in the welding and air-conditioning/refrigeration classes at Delgado Community College (Louisiana) were randomly selected to participate in a study to evaluate their effective reading comprehension level, to investigate the impact of a study skill "preview" method such as the SQ3R on their test-taking abilities, and to test the readability level of their textbooks. Fifty students (25 in each subject area) were tested by the regular cloze method of testing readability. The cloze test consists of selecting a passage of prose material of approximately 275 words from the students' textbook and deleting every fifth word. Students are instructed to fill in the blanks with words appropriate to the context. The remaining 50 students were given the cloze test after exposure to a SQ3R "preview" of the material. Since there was little difference between the raw scores of the control and experimental groups in either subject area, it was determined that the SQ3R "preview" was of no value in augmenting test-taking skills. Since students were able to fill in correctly fewer than 38 percent of the blanks, it was determined that the welding and air-conditioning/refrigeration textbooks in current use were probably beyond the readability level of the students. (DC)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED116743

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

THE CLOZE PROCEDURE: A MEASURE FOR DETERMINING READABILITY LEVEL FOR VOCATIONAL JUNIOR COLLEGE STUDENTS

Musa B. Caffey

University of Southern Mississippi

JC 760 062

Abstract

As junior/community college educators are confronted with large numbers of "high risk" students, some method of bridging the gap between the student's reading comprehension level and the readability level of textbooks used must be found. This study investigates the effective comprehension level of welding and air-conditioning/refrigeration students randomly selected from an intercity community college in terms of textbooks used in the classrooms; investigates the readability level of the textbooks used in the classroom where these students were enrolled by the use of the Fry Readability Formula; and investigates the influence of an SQ3R "preview" technique on the test taking ability of these students. A cloze procedure test was constructed from the classroom textbook and administered to a control and an experimental group. An analysis of variance was computed using a Veldman (1967) F ratio procedure. The conclusions drawn from the analysis of data were that the textbook being used in the welding classroom was of marginal value and the textbook used in the air-conditioning/refrigeration classroom was of little use. Both textbooks would be difficult for the students to comprehend.

THE CLOZE PROCEDURE: A MEASURE FOR DETERMINING READABILITY LEVEL FOR VOCATIONAL JUNIOR COLLEGE STUDENTS

Introduction

In the past few years, the community/junior college has been undergoing a tremendous expansion. Both accompanying and contributing to this growth, according to Calitri (1970), is the "open door policy" that allows many students to enter that are disabled readers and may not be able to successfully read materials presented in regular college textbooks. This policy of non-restrictive admission forces the college to search for meaningful instructional materials to use with these "high risk" students. Instructors recognize that educational materials are of little value if they are written in a language that is complex and obscure to the student and materials must be found that will meet the academic and vocational needs of the students.

In a study by Evans and Dubois (1972), the instructor is challenged to determine three things about each of his students if he is to facilitate instructional learning: (1) the reading level of the student, (2) the readability level of the textbook, and (3) the skills needed by the student to successfully compete in the classroom. Junior/community college educators need to determine if a study technique can be used to successfully change reading

comprehension scores and to determine if college textbooks can be matched to the needs of students.

Purpose

The purpose of this study was to determine three objectives: (1) to evaluate the effective comprehension level of the vocational college student with low academic potential due to lack of previous experience and low proficiency in academic skills and abilities in terms of selected books; (2) to investigate whether a study skill "preview" method such as the SQ3R would influence the test-taking abilities of these students; and (3) to test the readability level of the textbooks used in the classrooms where these students study. If the textbooks used in the classrooms where these students are enrolled are too difficult, then some provision should be made for these students if they are to successfully profit from college instruction.

Subjects

The subjects for this study were randomly selected from the vocational/technical school of Delgado Community College in New Orleans, Louisiana. Two independent samples were used: one group of subjects was from the welding class, and the second group was from the air-conditioning/refrigeration class. Subjects consisted of approximately 50 male students from each class; they ranged in age from 18 years of age to 25 years of age. The open entry/open exit policy of the school may have caused some subjects to

be more advanced in the program than others.

Procedures

Each group of subjects was administered a cloze procedure test from the textbook of the class from which they were chosen. This cloze test consisted of a passage of prose material of approximately 275 words copied from the welding and/or the air-conditioning/refrigeration textbook. In each passage every fifth word was deleted and replaced with an underlined blank space of standard length. After the test was distributed to each subject in the group, the cloze test was explained to the students. For this purpose, a transparency was projected on a screen, and the blank spaces were filled in with words solicited from the students.

Each group of subjects was randomly divided into two subgroups. One subgroup from each independent sample (the welding students and the air-conditioning/refrigeration students) was administered a traditional cloze procedure test from the textbook used in the class from which they were chosen. The test was passed out to the group, and they were instructed to complete the test by filling in the blank spaces with the word they thought had been left out. Subjects had not read the material previously. Responses were scored correct when responses exactly matched the deleted word. Minor misspelling was disregarded. There was no time limit on the test.

The experimental administration of the cloze test was begun when subgroup two from each independent sample was given a textbook used in the classroom from which they had been chosen. Subjects were directed to turn to a chapter in the book by the person administering the test. A modified SQ3R survey of the material was made with the subjects; this consisted of looking at the title of the passage, looking at any illustrations on the pages, looking at the topic headings in bold print, suggesting questions that came to mind when going over the topic headings, asking subjects to recite what had been gone over in the preview, and answering any questions asked by the subjects. This took between 10 and 15 minutes. The books were taken up, and the subjects in subgroup two were administered the same cloze procedure test that had been administered to subgroup one. All testing was done at different times on the same day and scored in the same manner.

Analysis of Data

For an analysis of the data, the test battery was scored by the researcher according to the exact deletion criteria as proposed by Taylor (1957). The raw scores were then transformed into percentages of correct responses. An analysis of variance between the mean scores of the raw scores and the percentage scores was calculated to determine the variance between the two control groups which were given the SQ3R "preview" before administration of the cloze test

in each independent sample. Data were computed at the University of Southern Mississippi Computer Center using a Veldman (1967) F ratio procedure.

The following research hypothesis was tested to evaluate the objectives of the study.

> There will be a significant difference in the cloze responses of the students randomly selected to receive the modified SQ3R survey of the material prior to taking the cloze test and the responses of the students that are administered the cloze test without this "preview." Two separate investigations were conducted in two similar samples: vocational welding and vocational air-conditioning/refrigeration.

Hypothesis Testing (Welding Subjects)

The welding subjects were randomly selected and divided into two subgroups. The control group was administered the cloze procedure test constructed from passages from their textbook used in the welding class. The experimental group was administered the same cloze procedure test; however, before taking the test, the researcher went through a SQ3R "preview" of the material from which the test was taken.

The hypothesis that there would be a significant difference in the cloze responses of the welding students randomly selected to receive the modified SQ3R survey or

the material prior to taking the cloze test and the responses of the welding students that were administered the cloze test without this "preview," was tested by computing an F ratio between the mean raw scores of the two subgroups (those receiving the traditional cloze test and those receiving the experimental treatment before the cloze test). The first analysis used a raw score mean comparison.

The F ratio (.332, df 1, 19, $p > .05$) was not significant at the established probability level; therefore, the hypothesis was rejected (See Table 1). There did not appear to be a difference in the way the welding students responded to the two types of cloze testing on the same material.

Table 1

Analysis of Variance: Welding Subjects (Raw Scores)

Source	MS	df	F ratio	p
Group I. Control	18.4	1, 19	.332	.5777
Group II. Experimental	16.27	1, 19	.332	.5777

For a more observable and practical description of the cloze test performance, the cloze scores were changed to percentage scores. The F ratio, of course, remained non-significant. This transfer to percentage scores

allowed for a comparison with known cloze success estimates. Using cloze criterion value of 35% through 40% correct (Rankin, 1969), it was determined that the welding group percentage scores in the control and experimental group indicated that the textbook was of marginal utility to the students since the percentage scores were close to the 38% score or the instructional level (See Table 2).

Table 2

Welding Subjects (Raw and Percentage Scores Correct on Cloze Tests)

Source	Raw	Percentage
Group I. Control	18.4	36.8
Group II. Experimental	16.7	32.5

Hypothesis Testing (Air-Conditioning/Refrigeration Subjects)

The air-conditioning/refrigeration subjects were randomly selected and divided into two subgroups. The control group was administered the cloze procedure test constructed from passages from the textbook used in the air-conditioning/refrigeration class. The experimental group was administered the same cloze procedure test; however, before taking the test, the researcher went through a SQ3R "preview" of the material from which the test was taken.

The hypothesis that there would be a significant difference in the cloze responses of the air-conditioning/refrigeration subjects selected to receive the SQ3R survey of the material prior to taking the cloze test and the responses of the welding students that were administered the cloze test without this "preview," was tested by computing an F ratio between the mean raw scores of the two subgroups (those receiving the traditional cloze test and those receiving the experimental treatment before the cloze test). The F ratio (1.161, df 1, 42, $p > .05$) was not significant at the established probability level; therefore, the hypothesis was rejected. There was no difference in the way the air-conditioning/refrigeration subjects responded to the two types of cloze testing (See Table 3).

Table 3

Analysis of Variance: Air-Conditioning/ Refrigeration Subjects (Raw Scores)

Source	MS	df	F ratio	p
Group I. Control	8.8	1, 42	1.161	.2874
Group II. Experimental	10.54	1, 42	1.161	.2874

For a more observable and useful description of the cloze test performance the raw scores were changed to percentage scores. The F ratio, of course, remained non-significant.

This transfer to percentage allowed for a comparison with known cloze success estimates. Using cloze criterion value of 35% through 40% correct (Rankin, 1969), it was determined that the students could not read the textbook. With scores such as 17% and 21%, which were the mean scores of the two groups, the scores are observably lower than a needed 35% for instructional level. This difference between the students' ability and the difficulty of the material would make the entire testing procedure of this research in the air-conditioning/refrigeration group of little value in a comparison of traditional vs. experimental methods of cloze (See Table 4).

Table 4

Air-Conditioning/Refrigeration Subjects (Raw and Percentage Scores Correct on Cloze Tests)

Source	Raw	Percentage
Group I. Control	8.8	17.6
Group II. Experimental	10.54	21.08

Additional Investigations

The readability level of the two textbooks that were used in the construction of the cloze procedure tests for the two groups of subjects was computed according to the Fry Readability Formula (Fry, 1972). The textbook for the welding students, New Lessons in Arc Welding, was

computed to be written on approximately a tenth-grade level. The textbook for the air-conditioning/refrigeration students, Modern Refrigeration and Air-Conditioning, was computed to be on a fairly high college level. Another textbook that is used in the welding class but not used to construct the cloze test, The Oxy-Acetylene Handbook, was computed to be written on an eleventh-grade level. These computations would certainly indicate that some provision should be made for these students in the community/junior college if they are to experience success.

Summary

On the basis of the research data collected, the hypothesis stating that there would be a significant difference in the cloze responses of the students randomly selected to receive the modified SQ3R survey of the material prior to taking the cloze test and the responses of the students that were administered the cloze test without this "preview" would be rejected in both vocational samples. However, when the raw scores were converted to percentage scores and the means computed, it was determined that the textbook in the welding class would be of marginal utility since the percentage scores were close to the 38% score of the instructional level. The Fry Readability Formula was used to determine the difficulty of the textbooks used in these vocational/technical classrooms from which students were chosen for this research. The books were found to be

too difficult for the students to be successful in their study. Some method of closing the gap between the student and the textbook should be determined by the college.

REFERENCES

Calitri, C. J. Open enrollment: Ticket to reality. Teacher's College Record, 1970, 72, 81-91.

Evans, H. M., & Dubois, E. A. Community/junior college remedial program: A reflection. Journal of Reading, 1972, 16, 39-45.

Fry, E. B. Reading instruction for classroom and clinic. McGraw-Hill, 1972.

Rankin, E. F., & Culhane, J. W. Comparable cloze and multiple-choice test scores. Journal of Reading, 1969, 13, 193-198.

Taylor, W. L. Cloze readability scores: An indices of individual differences in comprehension and aptitude. Journal of Applied Psychology, 1957, 41, 19-26.

Veldman, D. J. Fortran programming for the behavioral sciences. New York: Holt, Rinehart and Winston, 1967.

UNIVERSITY OF CALIF.
LOS ANGELES

FEB 13 1976

CLEARINGHOUSE FOR
JUNIOR COLLEGES